

Geographical study of environmental crisis and conservation in Ranthambore National Park

Harishankar Gupta

Assistant Professor, Department of Geography, Government College Tijara, Alwar, Rajasthan

Abstract

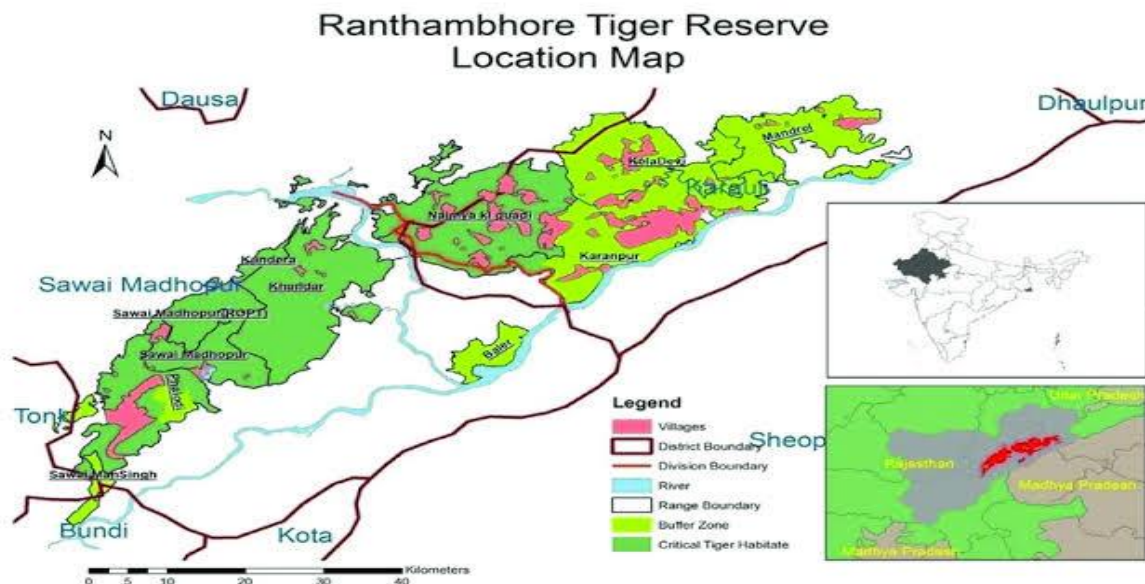
Ranthambore Tiger Reserve lies in the eastern part of Rajasthan state in Karauli and Sawai Madhopur districts, at the junction of the Aravali and the Vindhya hill ranges. It comprises of the Ranthambore National Park as well as Sawai Mansingh and Keladevi Sanctuaries, each with varied conservation history. Geographically, narrow corridors link the two sanctuaries to the reserve's core– the National Park. This isolated area with tigers in it represents the north-western limit of the Bengal tiger's distribution range and is an outstanding example of Project Tiger's efforts for conservation in the country. Ranthambore National Park has been in existence for a long time. We can guess the fame of Ranthambore National Park from the fact that domestic and foreign tourists come here to see this Tiger Reserve. Once a favorite hunting ground of kings, this national park is no less than a paradise for wildlife lovers around the world. This sanctuary is considered to be the safest place in today's time to increase the population of endangered tigers. Big channels like National Geography and Discovery National Geography and Discovery Channel have been making documentaries on the wildlife here for years. Ranthambore National Park is the largest and most famous national park in North India. Ranthambore National Park Location in India Map Ranthambore National Park is located in the Sawai Madhopur district of south-eastern Rajasthan, about 130 km from Jaipur. Before independence, this forest was one of the hunting grounds of the Maharajas of Jaipur. Ranthambore National Park is famous all over the world for its tigers, international agencies have done documentaries and research on tigers here. Ranthambore National Park Flora and Fauna Which animal is in Ranthambore National Park Although Ranthambore is famous for its tigers, it is very rich in wildlife. At present, due to the increase in the number of tigers in this sanctuary, the ecological balance has been affected, Ranthambore Tiger Reserve is virtually an ecological island burdened with heavy pressure of human and cattle population. The economy and livelihood of local people depend to a large extent on the resources of Reserve. The Reserve is comparatively a small area of forest; the isolated wild life population of Reserve is vulnerable from the point of availability of food & water, health and inbreeding. The major threats to wild life can be considered as under so in this research paper, a geographical study of ecological crisis and conservation in Ranthambore National Park has been done.

Key words :- Wildlife of Ranthambore National Park, Vegetation in Ranthambore National Park, Ranthambore National Park Tiger Reserve, Present Status, Tigress Machhali T-16, Ecological Threats and Conservation in Ranthambore National Park.

I. Introduction of Ranthambore National Park:-

Ranthambore National Park is spread over an area of 282 square kilometers, after adding the buffer zone, this park has increased to 392 square kilometers. Being a mountainous area, this national park is 200 to 500 meters high above sea level. India became independent in 1947 and Sawai Madhopur also merged with India, in 1955 this place was made Sawai Madhopur Game Sanctuary by the Government of India, but at this time tiger hunting was all over the country. This place also did not remain untouched by tiger hunting. Due to the increasing hunting of tigers, the existence of this magnificent animal was in serious danger. There came a time when the population of tigers in the entire country was only around 1000 tigers in 1970. In April 1973, the Government of India announced Project Tiger to save the tigers. Ranthambore of Sawai Madhopur has been made a part of Project Tiger. There are a total of 50 tiger reserves in India. In 1973, there were a total of 37 tigers left in Ranthambore Tiger Reserve, but after so many years of tireless efforts, today there are a total of 70 tigers in this Ranthambore National Park. This tiger reserve was converted into a national park on 1 November 1980. Ranthambore National Park was expanded in two parts, one in 1984 with the name of Sawai Man Singh Sanctuary and the other in 1991 with the name of Keladevi Sanctuary. Presently it is known as Ranthambore National Park.

Location map of Ranthambore Tiger Reserve



Objective :-

1. A geographical study of the wildlife and flora of Ranthambore National Park was conducted.
2. Threat and conservation analysis was conducted on tigers in Ranthambore National Park.

Hypothesis :-

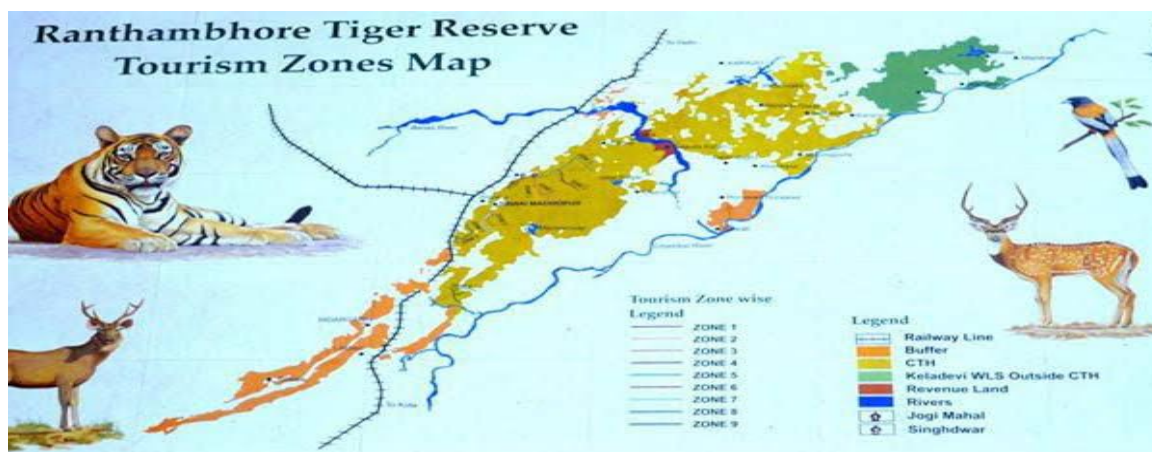
1. Environmental crisis of wildlife and human community has occurred in Ranthambore National Park.

Study methodology :-

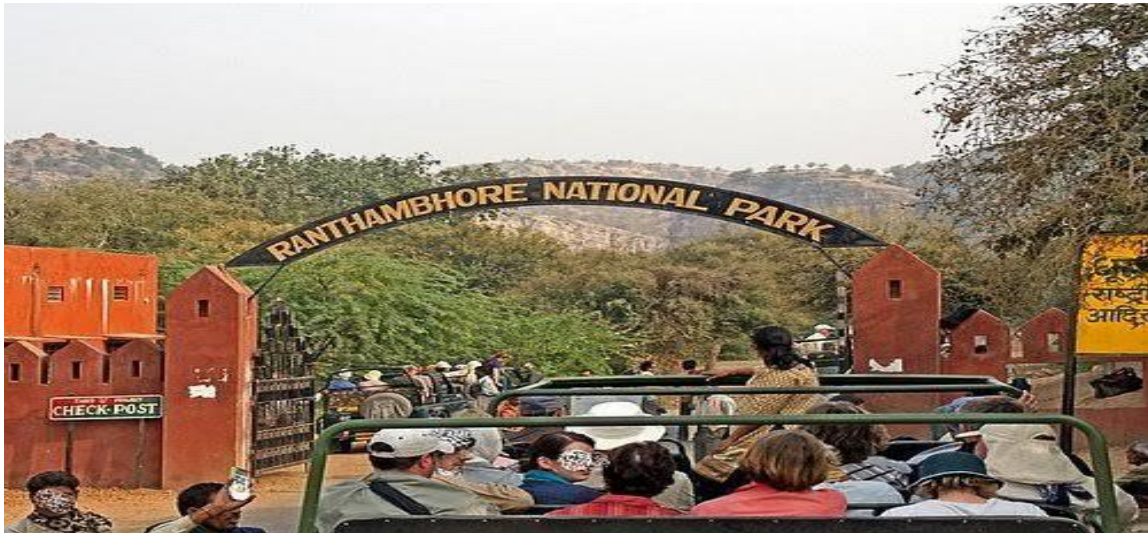
Primary and secondary data have been used in the presented research paper. Primary data was collected through questionnaire, schedule, interview and personal contact. Secondary data has been obtained through various magazines, newspapers, various websites and books. Information received from Forest Department Ranthambore, District Sawai Madhopur, Economic and Statistics Department, Sawai Madhopur, District Collector Office, Sawai Madhopur was used in the study. This study is based on the methodology of environmental protection.

Wildlife of Ranthambore National Park :-

This sanctuary is famous for the Bengal Tiger. This wildlife sanctuary is not only known for tigers but a wide range of creatures are seen in this forest, being a wildlife sanctuary, hunting is completely prohibited in this area. The animals living here have benefited from this. Today, because of this, apart from the tiger, we get to see many other amazing wild animals here.



Other fauna found here are mainly sloth bear, Indian leopard, sambar, rhesus macaque, nilgai, southern plains gray langur, wild boar, striped hyena, crocodile, chital apart from these reptiles and many migratory bird species are also found. Here tiger, leopard, striped hyena, sambar deer, chital, nilgai, mango or Hanuman langur, macaque, jackal, wild cats, bears, black buck, Indian wild boar, chinkara, toddy cat, desert cats, Indian flying fox, Apart from this, Indian fox, Indian mole rat and mongoose are found. Reptiles include swamp crocodile, monitor lizard, tortoise, krait, snake, Russell's viper and chameleon. Many species of birds are also found in Ranthambore. According to an estimate, more than 272 species of birds can be seen here. Malik Pond, Ranthambore Fort, Rajbagh Pond, Padam Pond and Jhalra area are the best places for bird watching. Mainly swans, woodpeckers, Indian gray hornbills, common kingfishers, bee-eaters, parrots, Asian palm swifts, owls, pigeons, sandpipers, gulls, great terns can be seen here. Eagles, flamingos, ibis, pelicans, storks, petrels, cuckoos, munias, bulbuls and mynas can be seen here.



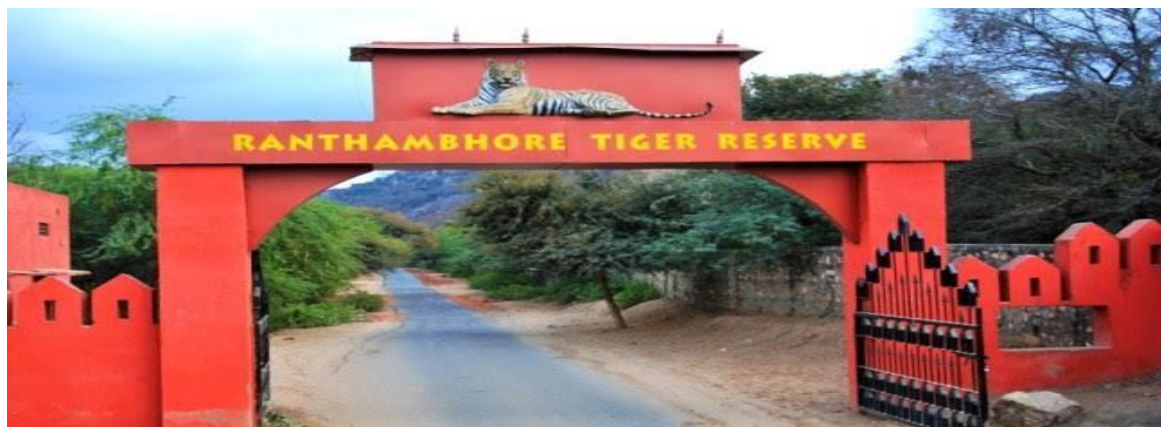
Vegetation in Ranthambore National Park :-

Most of the land of Rajasthan is either desert or plains, due to the presence of Aravalli mountain range in the remaining area, some areas are also mountainous. Ranthambore National Park located in Rajasthan is mainly a hilly area but still the region has to depend only on monsoon rains due to its proximity to the Thar Desert. It receives only monsoon rainfall throughout the year, so most of the vegetation found here is dry deciduous.

Despite so many geographical disparities, this national park is very rich in flora, due to which the environment here becomes favorable for the creatures living here. Lakes, ponds, waterfalls, steep hills, plateaus, narrow valleys are naturally formed in this entire forest area to provide water to the wildlife, hence there is no shortage of water throughout the year. In which the plant named 'Dhok' (*Anogisus pendula*) is found most in this forest area, apart from this there are many trees like Banyan, Peepal, Neem, Mango, Jamun, Plum, Tamarind, Babul, Gurjan, Gum, Kadam and so on. Kikars are found in this forest area. Species of trees and plants are found. Many of these plants are rich in medicinal properties and are used as food for many wildlife. The banyan tree located near Jogi Mahal is the second banyan tree in India. Beautiful plants of lotus and lily growing in ponds and lakes are also found in abundance in Ranthambore Tiger Reserve. According to an estimate, more than 300 species of flora are found in this national park.

Ranthambore National Park Tiger Reserve :-

Ranthambore National Park is also known as Ranthambore Tiger Reserve. Today the population of tigers in this national park is 69 and it is continuously increasing. When this place was declared a game sanctuary in 1955. Since then, tourists started coming here and the population of the villages around the park also started increasing and this started having an adverse effect on the tigers living here. Hunting of tigers started increasing in this forest, due to which there was a huge decline in the population of tigers living here. In 1973, to save the tigers, the Government of India started Project Tiger and initially 2 areas of 60 miles each were created for the park, after which Ranthambore National Park was declared in 1980 and the area of the park was also expanded . , According to the census conducted in 2005, the number of tigers was reduced to only 26, which was much less than the census conducted in 1982, at that time the population of tigers was 44. According to an estimate, the number of tigers in this park in 2008 was 34, out of which more than 14 were tiger cubs.



present situation :-

Good news has come from Ranthambore Tiger Reserve of Rajasthan on 18 June 2021. Tigress T-111 has given birth to four cubs. Field Biologist Harimohan Meena of Ranthambore National Park, Sawai Madhopur, saw four cubs of tigress T-111 drinking water together in the Aadi Dagar drain in Lakdada Forest Range of Kundera Range at 9 am on Friday. His mother was not with him then. Now the total number of tigers in Ranthambore is 69 including 21 male tigers, 30 female tigers and 18 cubs. Forest officials have increased the security of the tigress and her cubs. Tikamchand Verma, Chief Forest Conservator of Ranthambore Tiger Project, said that Harimohan Meena, field biologist of the Tiger Project, had seen four cubs of the tigress. After that, an inspection team of forest officials was sent where tigress T-111 was also seen near the cubs. He told that the cubs are about two months old. Camera traps are being installed under Phase 4 monitoring for the safety of the tigress and cubs. Verma said that from the behavior and physical structure of tigress T-111, it seemed that the tigress had given birth to cubs. Apart from this, there are one male tiger and one female tigress along with two cubs i.e. a total of four tigers in Kaila Devi Sanctuary under Ranthambore Tiger Project Karauli.



According to the Chief Forest Conservator, there are currently four tigers in Dholpur, one male, one female and two cubs. The number of tigers in Ranthambore has increased due to the tigress giving birth to cubs, which is a good news for Ranthambore. He said that the forest department is monitoring the cubs and the tigress for their safety. The Forest Department team is constantly keeping an eye on them.

A lot of efforts are made by the forest department employees and officers to prevent illegal hunting in the park. Residents of rural areas living in the national park were being encouraged to relocate, and surveillance cameras were also installed in the forest area to keep an eye on poachers.

After a few months, the effect of the efforts being made by the Forest Department started becoming visible, the number of tigers started increasing. The Government of India has set a total budget of US\$153 million for Project Tiger. For this, Ranthambore Forest Department got a big success when it was selected for the Sariska Tiger Reserve programme.

Tigress Machhali T 16 :-

The tigers here have a major contribution in the fame of Ranthambore National Park. Let us give you some information about the most famous tigress Machhali (T-16) of this national park. Machhali (T-16) was born in the monsoon month of 1997, this tigress had a fish-shaped mark on her left ear, due to which it was named Machhali.



Tiger Machhali begin hunting at age 2 and soon come under their mother's authority. After some time the fish had taken over most of the area of Ranthambore National Park. Ranthambore palace, lakes, ponds and almost the entire forest came under his jurisdiction. It is said that 350 square miles of forest was under the control of the tigress.

Tigress Machhali also holds some world records, like a tiger can occupy a territory for an average of 7-8 years, but Tigress Fish was the only tigress in the world that ruled the forests of Ranthambore National Park for 15 years. The average age of a tigress is 16-17 years but when Machhali died on August 18, 2016, she was the oldest tigress at 20 years.



The Machhali 16 has also been given various nicknames such as "The Lady of the Lake" and "Crocodile Killer". Big Wildlife Channel has made a documentary on this tigress, Tigress Fish is also famous as the world's most photographed tigress. Between 1998 and 2009, the Indian government earned US\$100 million from tiger fish.

The Government of India honored Tigress Fish with a "Lifetime Achievement Award" for her contribution to tourism and forest conservation. A commemorative postal cover and stamp was also issued in her honour.

Apart from Machhali (T-16), other magnificent tigers have made their mark in this national park – Ustad (T-24), Sundari (T-17), Dollar (T-25), Jhumru (T-20), Sitara (T-28), Mala (T-39), Jagli (T-41), Bina One and Bina Two.

Wing Commander Vimal Raj airlifted the first tiger (Dara) from Ranthambore to Sariska on 28 June 2008 with the help of MI-17 helicopter. But on November 15, 2010, this male tiger died accidentally after consuming poison.

Today, of course, the tigress Machhali is gone, but there are so many stories and children in Ranthambore that every tourist who comes here is told in which ponds and ponds the machhali took bath and defeated many tigers in the fight for its rights.

Conservation issues of Ranthambhore Tiger Reserve :-

The people living around the Ranthambhore Tiger Reserve are mostly farmers and pastoralists. The tiger reserve has some negative effects on the population of the surrounding settlements, such as wild animal raids, killing of farm animals, etc. Tourism is a major source of income for the locals, but there is a feeling among many people that the very existence of the reserve creates serious problems in the "economic development" of the area . Based on the above factors, the zone of influence (ZI) of the tiger reserve is "tentatively" identified as the area within 10 km of the legal boundaries of the reserve. Generally speaking, this is the zone where most human-animal conflicts take place.

Ranthambore National Park has no village within its boundaries, but all other parts of the tiger reserve have a large number of villages, places of worship and even a few small towns within the boundaries. All these places existed for many years before the area was declared a protected reserve.

ZI outside the reserve can be further divided into two parts. The first part is up to 2 kilometers from the border of the reserve and is the most important from all sides. The forest dependency of this area is maximum and the maximum impact of the reservation is felt by these areas. There are 112 villages in this area. This area is classified as an "ecological development zone". People living in this zone see the reserve as their resource to exploit and are upset when they are prevented from doing so, although this attitude is slowly changing.

As we move further from the reservation boundaries, people's dependence on the reservation decreases, but seasonal dependence on the reservation still exists. In areas more than 2 km from the boundaries of the reserve,

the negative impact of the reserve is not felt much and as a result the antagonism towards the reserve is much less among the residents of the area.

The presence of a protected area among them affects the lives of local residents in various ways, which creates negative effects of the reserve on local residents. The main issues are – the perception among the people that development has stopped due to the presence of the reserve, such as construction of roads, dams, power lines, etc., which are not allowed in the reserve. No large industry may be developed in the area. Crop raids by feral ungulates and livestock lifting by carnivores result in financial losses. Restricting access to the reserve for grazing and other needs resulted in loss of income from natural resources and affected their lifestyle. Local people are not allowed to visit their religious places inside the reserve by park staff.

These negative effects of the reserve on people affect the very existence of the reserve and it is the management of this zone of influence that affects the tiger reserve positively or negatively.

One big advantage of Ranthambore is that the people who live around the reserve have a very high tolerance for wild animals in general and tigers in particular. They lived with wildlife around them and that makes a huge difference. The biggest grouse they have with wildlife is crop raiding by ungulates. They don't have that much of a problem with the odd cattle killed by predators.

To protect and improve the ecosystem of Ranthambore Tiger Reserve.

To maintain a viable tiger population for scientific, economic, aesthetic, cultural and ecological values.

Develop ecotourism locations outside the defined core area.

Improve the productivity of grasses, firewood and other species in the buffer zone to reduce pressure on the core zone.

Reduce the negative impacts of people on the protected area and vice versa through ecological development initiatives in the impact zone and relocation of villages from the Project Tiger area.

Develop and maintain existing corridors to support the spread of wildlife.

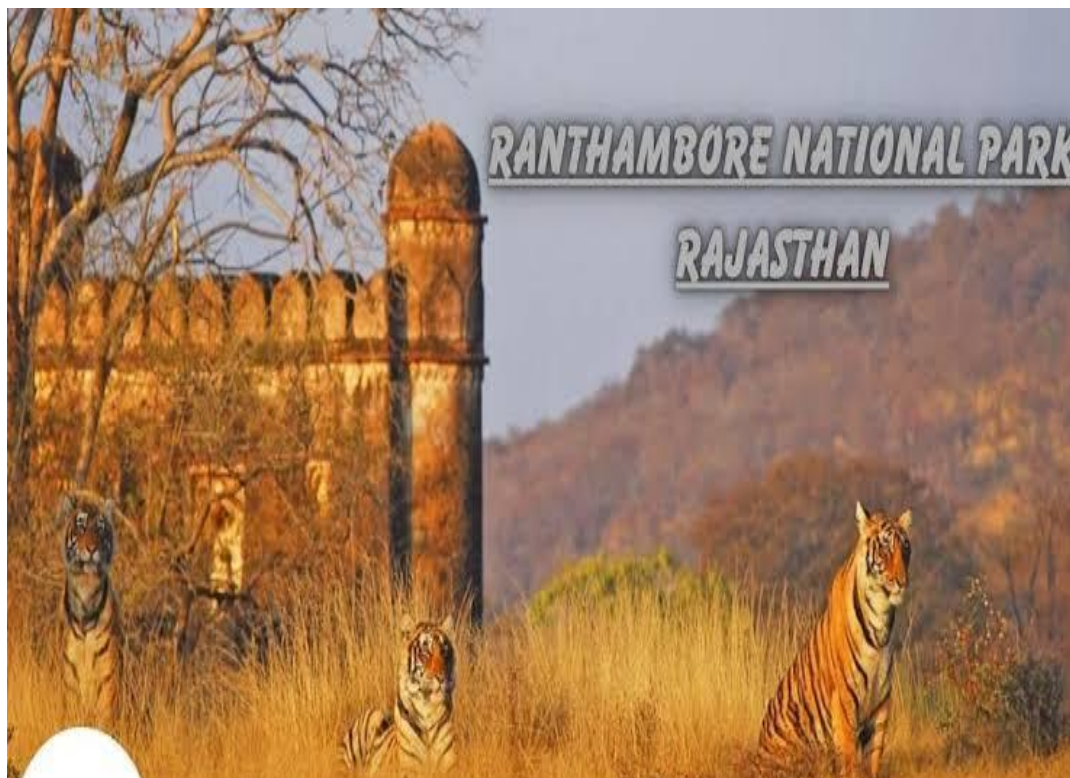
To support socio-economic studies and ecological research in accordance with the above objectives.

To motivate the Mogis and other nomadic tribes to change their poaching habits and rehabilitate them.

Improve staff capacity through appropriate training program and strengthen infrastructure.

Ecological crisis and conservation in Ranthambore National Park :-

Due to the increasing number of tigers in Ranthambore Tiger Project, the problem of mutual conflict and migration is increasing. The area of the national park is no longer enough for them. In view of this, now the issue of displacement of tigers in Mukundara Tiger Reserve of Kota has started rising. Kota MP Om Birla raised this issue in Parliament during Zero Hour.



He said that the number of tigers in Ranthambore Tiger Project, Sawai Madhopur in Rajasthan has increased and the area of the National Park is accordingly inadequate, due to which the problem of conflict and migration among tigers is increasing. Tigers are moving from the national park to populated areas and some tigers have also migrated to other forest areas. In such a situation, it is necessary to relocate the tigers somewhere else in the tiger reserve to provide them safe and suitable forest area.

He said that Mukundara Tiger National Park has been declared in Kota district of Rajasthan. If some tigers are brought from Ranthambore and settled in the said park, then an area suitable for the tiger population will be developed and they will also get a safe forest area. Just as tigers were displaced from Ranthambore in Sariska Sanctuary in the past, similarly it is very important to relocate tigers in Mukundara Tiger Reserve area.

Presenting the facts, he said that the area of Ranthambore Tiger Project located in Sawai Madhopur district of Rajasthan is 1411 square kilometers. According to experts, a pair of tigers usually requires an area of 60 to 80 square kilometers and it is favorable to have 2 or 3 females along with a male tiger. At present 23 males, 23 females and 4 cubs have been identified in Ranthambore. Due to insufficient area for tigers, 6 tigers have migrated elsewhere in the last three years and are living in the forests of Datia Puno Palampur in Madhya Pradesh and Ramgarh, Sultanpur, Bharatpur and Dholpur in Rajasthan. Mukundara Tiger Reserve which has been declared in Kota district currently has an area of 759 square kilometers and is suitable for 6 to 8 pairs. If tigers are relocated here on the lines of Sariska, a new source of tourism will develop and the tigers will also get a safe environment. A proposal of Rs 9.45 lakh to develop the Mukundara Tiger Reserve is under consideration with the National Tiger Conservation Authority under the Union Ministry of Forest and Environment. In which an amount of Rs 5 crore is under consideration for the rehabilitation of villagers and Rs 4 crore 45 lakh is under consideration for other necessary works. If this amount is released as soon as possible then the obstacles in the displacement of tigers in the tiger reserve area will be removed. Due to the increase in the number of tigers in the Ranthambore Tiger Project, where the forest officials and the government are getting applause in the name of tiger conservation, due to the increase in the number of tigers, the forests are now becoming small for them.

According to research, in the area currently available for tigers in Ranthambore, only 40 and maximum 50 tigers can live in it, but the presence of more tigers than this is very worrying. Tigers are coming out every day in search of territory. At the same time, tigers are not deterred even from going to human houses. In such a situation, a conflict situation is arising between tigers and humans and its results are coming out in the form of tiger attacks. There have been 14 deaths due to tiger attacks in the last 14 years. Whereas there have been three deaths in the last one and a half month. This year this figure is quite scary.

Wildlife expert CB Singh, who is fighting the legal battle for tiger conservation, says that Ranthambore National Park has a capacity of 40 tigers. It can house a maximum of 50 tigers, but Ranthambore's number is 71. In such a situation, either there is conflict between tigers or they will come out and join the population. The simple solution to this is to create a corridor for tigers. The villages should be displaced so that they can get a place to live, but the Forest Department and the State Governments are not taking any steps in this direction. Recently the High Court has also given orders regarding the management of the Forest Department. It is necessary to implement them. At the same time, the villagers' dependence on the forest has not reduced. Attacks occur while fetching wood and grazing cattle. Efforts should also be made to reduce dependence on forests. The deteriorating tiger-tigress ratio in Ranthambore is also a reason for this. According to experts, there should be three tigresses for one tiger. At present the number of tigers and tigresses in Ranthambore is equal. In such a situation, at present there is no place for Male Tiger.

In the Ranthambore Tiger Reserve of the state, there is a continuous conflict going on between the tigers for the last 10 months for dominance of the area. Many tigers have also been injured in this fight for mutual supremacy between tigers. To get rid of this problem, a plan has been made to shift them to Mukundara Tiger Reserve in Kota. Tigers have clashed with each other 4 times in the last 10 months in Ranthambore Tiger Reserve in Kota. In which two tigers died and three were injured in a fight for dominance of the area. At present there are 62 tigers and tigresses. In January 2021, there was a fight between two tiger brothers over a tigress. To show their supremacy, these tiger brothers have become mortal enemies of each other. Tigers will be shot from Ranthambore. Veeru's life ended in this fight. After this, the wildlife lovers of the city have demanded to transfer the tigers to Mukundara Hills Tiger Reserve, so that their lives can be saved.

Mukundra Hills Tiger Reserve of Hadoti has been prepared to save the lives of tigers. Complete arrangements have been made for free movement of tigers in this park. Just waiting for the green signal from NTCA and Chief Wildlife Warden. If approval is given from here, these tigers will soon be shifted to Mukundhara. According to Dr. T. Mohanraj, Deputy Conservator of Forests, Mukundra, the software release enclosure built in Seljar has been cleaned. It has been completely prepared for the shifting of tigers. There is a good amount of herbivorous wildlife here providing adequate foraging grounds for the tigers. After the Broken Tail Tiger that came about one and a half decade ago in 2003, the roar of tigers is going to be heard in this forest area of Mukundara. Here everyone is eagerly waiting for the arrival of the gardens. Till now there are two tigers and 2 tigresses in Mukundhara. Who are roaming in Dara and Gagron ranges of Mukundara Hills Tiger Reserve.

Now 1 tiger and 2 tigresses are going to come here from Ranthambore. After this there will be a total of 7 tigers and tigresses. This tiger reserve will also boost tourism here. In such a situation, everyone is just waiting for NTCA to give the green signal to it soon and the tigers can be shifted here.

II. Conclusion :-

It is clear from this study that the Rajasthan government has issued strict instructions to all the forest officials for the protection of tigers in Ranthambore. The contribution of tigers in maintaining environmental balance in Ranthambore is considered very important. Due to the increasing number of tigers in Ranthambore Tiger Project, the problem of mutual conflict and migration is increasing. The area of the national park is no longer sufficient for them. Tigers are moving from the national park to populated areas and some tigers have also migrated to other forest areas. In such a situation, it is necessary to relocate the tigers somewhere else in the tiger reserve to provide them safe and suitable forest area. Therefore, the state and central government will have to work together for the conservation of Ranthambore National Tiger Reserve, only then along with human life, wild animals can also remain safe.

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